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Intranet Portal Utilization: Monitoring Tool for Productivity - Quality and Acceptance Point of View

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Abstract

History has shown that portals help to overcome the problems that plague many management issues. In today's business arena, portals are very important in getting information and service delivery efficiency and effectiveness; it has the potential to develop the performance of an organization in terms of productivity and business process efficiency. Portals are never ending projects and need modification from time to time to suit business requirements. However, portals can result in negative changes to business environment if developers and top management do not identify critical factors for sustainable utilization. Quality and acceptance in use factors must be blended together to make the portal more sustainable and highly utilized. Although the scope of this paper focuses on intranet portals in Higher Education Institutions (HEI); the idea can still be adapted to other organizations and knowledge workers. The insight forwarded by this conceptual paper could provide some basis for future studies in this domain, particularly regarding the factors for a sustainable portal; as well as the guidelines for practitioners to realize the portal need and value impact and also to place emphasis on portal utilization as a monitoring tool.

Keywords : Portal; Quality; Acceptance in Use; Productivity

1. Introduction

Intranet portals are having a dramatic impact on business applications, becoming the foundation for new information infrastructure. Businesses are able to reduce costs, shorten process cycle times, improve communications, reduce information overload, and offer services more effectively and efficiently (Tojib,

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Sugianto, & Sendjaya, 2006; Urbach, Smolnik, & Riempp, 2009). Many organizations have embraced it as a tool to help them achieve competitiveness and to integrate multi disciplines in order to bridge the gap between business and Information Technology (IT) services (Hanemann, Schmitz, & Sailer, 2005; Keller, 2005; Mayerl, Vogel, & Abeck, 2005; Stanley, Mills, Raines, & Baldwin, 2005). Intranet portals also offer a landscape for employees in Higher Education Institutions (HEI), who access its functionality depending on their role and position in organizational structures (Sikorski, 2006; Tojib et al., 2006). The success of Intranet portals as the single point of access (SPOC), enables front-end integration of information, communication, knowledge sharing, applications, information management and business processes within organizations; making it the primary tool through which employees perform work tasks and improve overall business performance (Urbach, Smolnik, & Riempp, 2011). Intranet portal adoption has been widespread and organizations treated it as a technological need instead of a lavish investment; even so, questions regarding its utilization remain unanswered (Masrek, 2007).

The term "portal" comes from the Latin word 'porta' which means 'gate' or 'gateway'; and many researchers agree it is a single, personalized interface where users can access information resources and services in a secure, consistent and customizable manner (Bajec, 2005). Uden and Salmenjoki (2007) define portals as gateways to information and services on the Web, in both the public Internet domain and corporate intranets. In spite the trend of successful implementation, many Intranet portal projects fail to accomplish the objectives of the organization (Andersson, Jeansson, & Winchler, 2009). Thus, users are left with applications they do not need or use; and usage as well as earnings will remain low. Bruwer (1984) stated that usage was the best indicator of IS success in an organisation. Lehmuskallio (2006) observed that one of the critical factors of Intranet portal success was the usage rates (how regularly employees use the intranet to serve their purpose as defined by management).The underlying reason for failures was the inability of organizations to understand actual benefits of Intranet portal implementation (Brown, Mines, Moore, & Barnett, 2007). Assessments of portal benefits did not take into account intangible impacts and intervening environmental variables (Urbach & Würz, 2011). According to Remus (2006), portal development is usually complex, time-consuming, costly and entails high risk. However, many organizations offer portals, and investments in portals are growing (Forrester, 2006).

Although there are many success stories on Intranet portals, questions still remain unanswered about the status of Intranet portal utilization. As such, this paper is designed to examine Intranet portal utilization (IPU), with quality and acceptance-to-use perspectives as the critical factors to sustain high utilization, use as a monitoring tool and employee productivity benefits due to high utilization.

2. Intranet Portal Utilization (IPU)

In today's competitive academic environment, factors that enable educational institutions to attract and retain stakeholders should be seriously studied. Universities that want to gain a competitive edge in the future may need to begin searching for sustainable, effective and creative ways to attract, retain and foster stronger relationships with stakeholders. Offering business value such as fast and updated information, one stop centres to archive data, enhanced customer support and tighter alignment with partners will lead to 'faith trips' if not supported by quality and accepted by stakeholders.

An Intranet Portal would provide employees and faculty with consistent, seam-less, adaptable, and secure access to information resources and business processes. Overall the need for a portal in a university is driven by two things: i) The current state of technology and its use in society that impacts university competitiveness and ii) university decentralized information services that create a difficult overall user interface within the organization as a whole. Today's users, especially employees, expect more from an organization in terms of transacting business easily. While universities are offering significant on-line resources and services, Intranet portals as monitoring tools show the decentralized nature of organizations (separate login functions for each site), distinct look-and-feel from site to site, and varying levels and methods for securing access. By consolidating the concept, a portal can provide some efficiency in information technology infrastructure and universities could enjoy economies of scale in

user account management. Unified user and security management will require the university to look at business models associated with providing a centralized service in a flexible and affordable manner. The idea of portal as a monitoring tool, is to broaden business thinking and to shift from an IT-centric to business-centric thinking that can give benefits to employees (Ramos, Orlov, & Teubner, 2004) and also break physical boundaries and extend the ability to collaborate and share (Duane & Finnegan, 2000). Individual utilization can be a combination of purely volitional and mandatory. Mandatory utilization is when organizations enforce the utilization of certain functionalities of the intranet such as functional business IS. While volitional utilization is purely dependent on users' discretion.

3. Quality and IPU

Quality has been defined in many ways such as 'excellence, value, conformance to specifications and to meet or exceed customers' expectations' (Reeves & Bednar (1994); 'the ability of a product to meet the stated and implied needs and wants users' (Juran (1979); and "fitness for use" that establish standards to meet customer needs (Juran & Gryna; 1988). Hence, Intranet Portals should have these quality factors.

Almost every university has portals; however whether it is of quality and efficient, has satisfactory usage rate and benefits are questions yet to be answered. Serious doubts have been raised about the lack of inclusive and convincing means of measuring a portal's ability to meet employee demands (Norman, 1998). However there is also evidence of dissatisfaction with technology due to quality issues which lead to wasted time, negative moods, poor interaction and low levels of satisfaction in its usefulness (Noor Aqilah & Norzaidi, 2010). An Intranet portal in a university should basically provide certain services for individuals depending on the needs of users; for example applications, knowledge sharing, information management and self service possibilities. Moreover, the content and overall impression of the Intranet portal (easy search method and quality content) can influence its usage rate. Aging legacy systems which are difficult to integrate and control are forming obstacles to ensure seamless cross application computing capability, easy-to-navigate interfaces, and real-time enterprise wide access to accurate high quality data (Eduventures, 2006). Therefore, employees are frustrated about multiple logins, different interfaces, losing time to find needed information (information is scattered and finding accurate information is time consuming and difficult), different access points needed through different channels. Universities are realizing that legacy system centric silos no longer make sense in the internet age and are focusing more on a computing environment. From the perspective of the university's many users, portals are seen as the solution for integration and collaboration of various departmental transactions and also as a monitoring tool. Employees are likely to perform their tasks quickly if the information they need can be accessed easily (Eduventures, 2006).

Furthermore, universities are often operated as highly decentralized enterprises, with faculties allowed considerable autonomy to choose their information systems, business rules, and operating guidelines. In a decentralized environment, university IT managers may find themselves supporting, at relatively high cost, several operating platforms and application, each with its own programming language and tools. Moreover universities as a highly competitive and service oriented business environment always focus on well managed IT service delivery and support as prerequisites to achieve business goals, therefore, to keep the pace with advancements in technology, employees working in different fields have to adapt 'paradigm changes' to be more productive and knowledgeable (knowledge workers). Employees must know the organization mission, strategy, competitors, customers, products and services; as such they must utilize data they have from their organisations' databases to produce more meaningful information. According to (Razali & Vrontis, 2010; Remus, 2006, 2007); employees' acceptance is fundamental for the success of any change program whereby once employees participate more in the change process, they tend to accept it more. Due to this, Intranet Portals as monitoring tools will help to align the utilization and keep track of progress by putting added value in quality (Table 1.1) and acceptance factors.

Table 1.1: Critical Factors on quality MUST be adapted to an Intranet Portal. (Moraga, Calero and Piattini, 2004)

Dimensions / Sub dimensions
1) Tangible: the portal contains all the software and hardware infrastructures needed according to its functionality.
2) Reliability: the ability of the portal to perform the specified services.
i. ***Availability***; the portal must be always operative.
ii. ***Search Quality***; the results align with the request made by the employee when making a search.
3) Responsiveness: Willingness of the portal to help and provide immediate functionality to the employees.
i. ***Scalability***; ability of the portal to adapt smoothly to increasing workloads which come about as a result of additional employees, an increase in traffic volume or the execution of more complex transactions (Gouge, 2003).
ii. ***Speed***; relates to the response times experienced by portal employees (Gurugé,2003)
4) Assurance: Ability of the portal to convey trust and confidence".
5) Confidentiality; the ability to keep the privacy of the employees.
6) Data Quality: Quality of the data contained in the portal.
i. ***Intrinsic DQ***; the degree of care was taken in the creation and preparation of information?
ii. ***Representation DQ***; the degree of care taken in the presentation and organization of information for employees?
iii. ***Accessibility DQ***; the degree of freedom employees have to use data, define and/or refine the manner in which information is inputted, processed or presented?
iv. ***Contextual DQ***; the degree for the information provide to meet the needs of the employees?

4. Acceptance-in-Use and IPU

The Intranet portal usage is far from optimized to the needs of the employees if they do not find it useful for daily work; hence usage and earnings will continue to stay low. According to (Benbasat, Barki, & Montréal, 2005; Venkatesh, Davis, & Morris, 2007), emphasized individual acceptance and use of information technology (Table 1.2) is the most mature streams of information systems research. Employees resistance or technology resistance due to low quality is also one of the decisive factors which can cause failure in organizational performance (Norzaidi, & Intan Salwani, 2009), where it can also influence an individual's performance (Markus, 1983). All these challenges are also noted by other researchers (Lapointe & Rivard, 2005; Martinko et al. 1996).

Table 1.2: Acceptance-of-Use

▪ Performance Expectancy	Extent to which an employee believes a system use will help achieving gains in task performance.
▪ Effort Expectancy	Extent to which the employee believes that the system will be easy to use.
▪ Social Influence	Extent to which the employee believes he or she should use the system.
▪ Behavioural Intention	Employee's intention to use the system.
▪ Facilitating Conditions	Extent to which the employee believes that an organizational and technical infrastructure exists to support system use.
▪ User Behaviour	Employee's rate of system use.

5. IPU and Productivity

Previous studies on IT adoption have recognized the contribution of IT on enhanced individual performance especially in terms of productivity, efficiency and effectiveness (Iivari, 2005). In the same light, studies on intranets also discovered that intranets improved work productivity (Kefos and Riedl, 2005; Daniel and Ward, 2005; Deltour, 2005; Masrek, 2007); improved individual commitment, empowerment and personal sense of accomplishment (Webb, 2002; Baptista et al., 2006). By definition, productivity refers to the extent the Intranet portal enhances or improves users output per unit of time. The manner and purpose upon which the intranet is being utilized clearly explain how task productivity

can be greatly enhanced as past research has shown the contribution of intranet in improving employee task productivity (Knight et., al, 2005). Intranet utilization saves time by encouraging users to be actively engaged in multitasking. While working on their jobs, users can concurrently interact via e-mails, transact across information systems, search for information or send information over the intranet. As such, by physically being in one location, users can virtually work with many people across departments. Hence, as more work can be done, productivity would certainly increase (Ramlah et. al, 2008).

Many HEI portals will make their employees "more efficient" and productive by centralizing access to needed data services. An Intranet portal offers more than just an access point for organizational data; removing the need for multiple logins to various applications, letting users perform individualized processes; enabling personalized features, continuous availability (24/7), remote access, role based activity presentation and automated workflow capability.

5. Conclusion

As portals continue to move away from a generalized concept to a specialized and more collaborative model, the need for timely and accurate information throughout the network will increase. This demand allows portal technology to be deployed in order to meet the internal information and knowledge-sharing needs. Portal technology creates competitive advantage by providing HEI with up-to-the-minute information and updated news and services. This paper provides managers, portal development teams and also employees with ideas on how the portal can be employed to improve management of HEI and increase productivity by looking at the critical factors, namely quality and acceptance-of-use factors. The researchers should look at all of the major components of intranet portals to maximum utilization and demonstrate that the future holds tremendous opportunity for HEI with the use of portals.

References

Aqilah, N., N. M. Norzaidi Daud, et al. (2010). "Examining the Impact of Intranet Usage on Managerial Level Performance at Malaysia Port Industry: A Conceptual Framework." IJACS **1**(1): 17. Norzaidi,

Aldridge, S., & Rowley, J. (1998). Measuring customer satisfaction in higher education. *Quality Assurance in Education, 6*(4), 197-204.

Andersson, J., Jeansson, J., & Winchler, A. (2009). The Intranet As A Working Tool: A Portal/Process Structure And A User Education View.

Bajec, M. and M. Krisper (2005). "A methodology and tool support for managing business rules in organizations." Information Systems **30**(6): 423-443.

Baptista, J., Backhouse, J. & Canhoto, A. "Intranet institutionalization and organizational trust: a longitudinal case study in the UK bank". Retrieved June 21, 2006 http://www.lse.ac.uk/collections/informationSystems/ newsAndEvents / 2006events/BaptistaAoM.pdf

Brown, M., Mines, C., Moore, C., & Barnett, J. (2007). Companies Adopt Employee Portals, Not Portal Best Practices, Forrester Research. *Inc, Cambridge*.

Bruwer, P. (1984). A descriptive model of success for computer-based information systems. *Information & management, 7*(2), 63-67.

Benbasat, I., Barki, H., & Montréal, H. (2005). *Quo vadis TAM*: HEC Montréal, Chaire de recherche du Canada en implantation et gestion des technologies de l'information.

Daniel, E., & Ward, J. (2005). Enterprise portals: addressing the organisational and individual perspectives of information systems.

Deltour, F. (2005). Satisfaction, acceptance, impacts: linking three modalities to evaluate intranets at individual level, Academic Conferences Limited.

Duane, A. and P. Finnegan (2000). Managing Intranet technology in an organizational context: toward a "stages of growth" model for balancing empowerment and control, Association for Information Systems.

Eduventures, LLC. Englert, B. (2003). Portal Trends in Higher Education. *Consultado, 11*(06), 04.

Forrester and Curtis, R. S. (2006). System, method and program for accessing networks, Google Patents
Hanemann, A., Schmitz, D., & Sailer, M. (2005). *A framework for failure impact analysis and recovery with respect to service level agreements*.
Hussein, R., M. N. Masrek, et al. (2008). "The utilization and effectiveness of intranet: a case study at selected Malaysian organizations." Communications of the IBIMA **4**: 200-206.
Iivari, J. (2005). "An empirical test of the DeLone-McLean model of information system success." ACM SIGMIS Database **36**(2): 8-27.
Kefos, C., & Riedl, R. (2005). Interviews about the Practical Implementation of the Intranet in Enterprises. *Technical Report ifi-2005.04*. Retrieved August 18, 2005 from ftp:// ftp.ifi.unizh.ch/pub/techreports/TR-2005/ifi-2005.04.pdf
J.M. Juran, Quality Control Handbook, Third Edition (New York McGraw-Hill, 1979), p. 5-11.
Juran, J.M. and Gryna, F.M. Jr (Eds.) (1988), Juran's Quality Control Handbook, McGraw-Hill, New York, NY.
Keller, A. (2005). *Automating the change management process with electronic contracts*.
Knight, L. V., Steinbach, T. A., Raffaella & Settimi (2005). An exploratory analysis of intranet benefits. *Proceedings of the 2005 Informing Science and IT Education Joint Conference.*
Lapointe, L. and S. Rivard (2005). "A multilevel model of resistance to information technology implementation." MIS quarterly: 461-491.
Lehmuskallio, S. (2006). The uses, roles, and contents of intranets in multinational companies in Finland. Journal of Business and Technical Communication, 20(3), 288-324.
Markus, M. L. (1983). "Power, politics, and MIS implementation." Communications of the ACM **26**(6): 430-444.
Martinko, M. J., R. W. Zmud, et al. (1996). "An attributional explanation of individual resistance to the introduction of information technologies in the workplace." Behaviour & Information Technology **15**(5): 313-330.
Masrek, M. N. (2007). Measuring campus portal effectiveness and the contributing factors. *Campus-Wide Information Systems, 24*(5), 342-354.
Mayerl, C., Vogel, T., & Abeck, S. (2005). *SOA-based integration of IT service management applications*.
Moraga, M. Á., Calero, C. y Piattini, M. (2004). A first proposal of a portal quality model. IADIS International Conference. E-society 2004. Ávila, Spain. Vol. 1(2). pp. 630-638.
M. D. and M. I. Salwani (2009). "Evaluating technology resistance and technology satisfaction on students' performance." Campus-Wide Information Systems **26**(4): 298-312.
Ramos, L., Orlov, L., & Teubner, C. (2004). Portal Projects in Search of a Purpose. *Trends. Forrester, Cambridge, MA*.
Razali, M. Z., & Vrontis, D. (2010). The Reactions of Employees Toward the Implementation of Human Resources Information Systems (HRIS) as a Planned Change Program: A Case Study in Malaysia. *Journal of Transnational Management, 15*(3), 229-245.
Remus, U. (2006); (2007). Critical success factors for implementing enterprise portals: A comparison with ERP implementations. *Business Process Management Journal, 13*(4), 538-552.
Reeves, C.A. and Bednar, D.E. Defining quality: alternatives and implications. *AMR 19*, 3 (1994), 419–445.
Sikorski, M. (2006). *Building employer credibility in corporate intranet portals*.
Stanley, J. E., Mills, R. F., Raines, R. A., & Baldwin, R. O. (2005). *Correlating network services with operational mission impact*.
Tatnall, A. (2005). Portals, portals everywhere. *Web portals: The new gateways to internet information and services*, 1-14.
Tojib, D. R., Sugianto, L. F., & Sendjaya, S. (2006). *A conceptual model for B2E portal user satisfaction.*
Uden, L., & Salmenjoki, K. (2007). Evolution of Portals. *Encyclopedia of portal technologies and applications: M-Z.*, 391.
Urbach, N., Smolnik, S., & Riempp, G. (2009). The State of Research on Information Systems Success. *Business & Information Systems Engineering, 1*(4), 315-325.
Urbach, N., & Würz, T. (2011). Designing A Reference Framework Of It/Is Outsourcing Steering Processes.
Urbach, N., Smolnik, S., & Riempp, G. (2011). Determining the improvement potentials of employee portals using a performance-based analysis. *Business Process Management Journal, 17*(5), 829-845.
Webb H.W., and Webb L.A. 2002. B2C Electronic Commerce Websites: an Analysis of Quality Factors. Eighth Americas Conference on Information Systems, pp. 340-347.
Venkatesh, V., Davis, F. D., & Morris, M. G. (2007). Dead Or Alive? The Development, Trajectory And Future Of Technology Adoption Research. *Journal of the Association for Information Systems, 8*(4), 267-286.